UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,359	03/25/2005	Alexei Gorokhov	NL 020978	6167

24737 7590 05/01/2008
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
CONTEE, JOY KIMBERLY	
ART UNIT	PAPER NUMBER
2617	
MAIL DATE	DELIVERY MODE
05/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,359	GOROKHOV ET AL.	
	Examiner	Art Unit	
	JOY K. CONTEE	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8,10-17 and 20* is/are rejected.

7)☒ Claim(s) *3,9,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,2,4-8,10-17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Glannakis et al. (Glannakis), US 7,292,647.

Regarding claim 1, Glannakis discloses a transmission system for transmitting an information signal via a plurality of subchannels from a transmitter to a receiver, the transmitter comprising: a demultiplexer for demultiplexing the information signal into a plurality of information subsignals in dependence on a throughput of the subchannels as ordered by the receiver; an encoder for encoding input symbols of the information subsignals into output symbols such that k input symbols of the k-th information subsignal are encoded with a k.times.m-code into m output symbols, 1.ltoreq.k.ltoreq.m, said code having the following properties: all k input symbols and all m-k other output symbols are determinable from any k output symbols, and no m-l other output symbols are determinable from any l output symbols, l<k; a multiplexer for multiplexing the output

symbols into output information subsignals; a channel encoder for channel encoding the output information subsignals into encoded information subsignals; and means for transmitting each encoded information subsignal via one of the subchannels to the receiver; the receiver comprising: means for receiving the encoded information subsignals; a channel decoder for successively channel decoding the received encoded information subsignals into channel decoded information subsignals by incorporating decoding information of already channel decoded information subsignals; a demultiplexer for demultiplexing the channel decoded information subsignals into channel decoded symbols; a decoder for decoding the channel decoded symbols into decoded output symbols and for supplying the decoding information regarding the decoded output symbols to the channel decoder; a further multiplexer for multiplexing the decoded output symbols into an output information signal (col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 2, Giannakis discloses the transmission system according to claim 1, wherein the code is a maximum distance separable (MDS) code (col. 13,lines 50-60).

Regarding claim 4, Giannakis discloses the transmission system according to claim 1, wherein the channel decoder is arranged for decoding a received encoded information subsignal by incorporating decoding information of the most recently channel decoded information subsignal(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 5, Giannakis discloses the transmission system according to claim 1, wherein the transmission system is a binary transmission system and wherein the information subsignals comprise differently routed binary signals(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 6, Giannakis discloses the transmission system according to claim 1, wherein the transmission system is a wireless communication system, and wherein the transmitter comprises a plurality of transmit antennas, wherein each channel encoded information subsignal is transmitted via one of the transmit antennas to the receiver, and wherein the receiver comprises a plurality of receive antennas for receiving the encoded information subsignals.

Regarding claim 7, Giannakis discloses a transmitter for transmitting an information signal via a plurality of subchannels to a receiver, the transmitter comprising: a demultiplexer for demultiplexing the information signal into a plurality of information subsignals in dependence on a throughput of the subchannels as ordered by the receiver; an encoder for encoding input symbols of the information subsignals into output symbols such that k input symbols of the k-th information subsignal are encoded with a k.times.m-code into m output symbols, 1.ltoreq.k.ltoreq.m, said code having the following properties: all k input symbols and all m-k other output symbols are determinable from any k output symbols, and no m-l other output symbols are determinable from any l output symbols, l<k; a multiplexer for multiplexing the output symbols into output information subsignals; a channel encoder for channel encoding the output information subsignals into encoded information subsignals; and means for

transmitting each encoded information subsignal via one of the subchannels to the receiver(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 8, Giannakis discloses the transmitter according to claim 7, wherein the code is a maximum distance separable (MDS) code(col. 13,lines 50-60).

Regarding claim 10, Giannakis discloses the transmitter according to claim 7, wherein the transmitter comprises a plurality of transmit antennas, and wherein each channel encoded information subsignal is transmitted via one of the transmit antennas to the receiver(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 11, Giannakis discloses a receiver for receiving encoded information subsignals via a plurality of subchannels from a transmitter, the encoded information subsignals being encoded with a k.times.m-code, said code having the following properties: k input symbols are encoded into m output symbols, 1.ltoreq.k.ltoreq.m, all k input symbols and all m-k other output symbols are determinable from any k output symbols, and no m-l other output symbols are determinable from any l output symbols, l<k; the receiver comprising: means for receiving the encoded information subsignals; a channel decoder for successively channel decoding the received encoded information subsignals into channel decoded information subsignals by incorporating decoding information of already channel decoded information subsignals; a demultiplexer for demultiplexing the channel decoded information subsignals into channel decoded symbols; a decoder for decoding

the channel decoded symbols into decoded output symbols and for supplying the decoding information regarding the decoded output symbols to the channel decoder; a multiplexer for multiplexing the decoded output symbols into an output information signal. (col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 12, Giannakis discloses the receiver according to claim 11, wherein the code is a maximum distance separable (MDS) code(col. 13,lines 50-60).

Regarding claim 13, Giannakis discloses the receiver according to claim 11, wherein the channel decoder is arranged for decoding a received encoded information subsignal by incorporating decoding information of the most recently channel decoded information subsignal(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 14, Giannakis discloses the receiver according to claim 11, wherein the receiver comprises a plurality of receive antennas for receiving the encoded information subsignals(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 15, Giannakis discloses a method of transmitting an information signal via a plurality of subchannels to a receiver, the method comprising: demultiplexing the information signal into a plurality of information subsignals in dependence on a throughput of the subchannels as ordered by the receiver; encoding input symbols of the information subsignals into output symbols such that k input symbols of the k-th information subsignal are encoded with a k.times.m-code into m

output symbols, 1.ltoreq.k.ltoreq.m, said code having the following properties: all k input symbols and all m-k other output symbols are determinable from any k output symbols, and no m-l other output symbols are determinable from any l output symbols, l<k; multiplexing the output symbols into output information subsignals; channel encoding the output information subsignals into encoded information subsignals; transmitting each encoded information subsignal via one of the subchannels to the receiver(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 16, Giannakis discloses the method of transmitting according to claim 15, wherein the code is a maximum distance separable (MDS) code(col. 13,lines 50-60).

Regarding claim 17, Giannakis discloses a method of receiving encoded information subsignals via a plurality of subchannels from a transmitter, the encoded information subsignals being encoded with a k.times.m-code, said code having the following properties: k input symbols are encoded into m output symbols, 1.ltoreq.k.ltoreq.m, all k input symbols and all m-k other output symbols are determinable from any k output symbols, and no m-l other output symbols are determinable from any l output symbols, l<k; the method comprising: receiving the encoded information subsignals; successively channel decoding the received encoded information subsignals into channel decoded information subsignals by incorporating decoding information of already channel decoded information subsignals; demultiplexing the channel decoded information subsignals into channel decoded symbols; decoding the channel dec02 oded symbols into decoded output symbols and

for supplying the decoding information regarding the decoded output symbols to the channel decoder; multiplexing the decoded output symbols into an output information signal(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Regarding claim 20, Giannakis discloses the transmitter according to claim 8, wherein the transmitter comprises a plurality of transmit antennas, and wherein each channel encoded information subsignal is transmitted via one of the transmit antennas to the receiver(col. 2,line 13 to col. 3,line 7 and col. 3,lines 46-60 and col. 5,line 44 to col. 6,line 3).

Allowable Subject Matter

4. Claims 3,9,18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOY K. CONTEE whose telephone number is (571)272-7906. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571.272.7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC

/Joy K Contee/
Patent Examiner (PSA), Art Unit 2617